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C. R. TUBE ENGINEERING - 6

TRIP REPORT

*D. C. Campbell*  
*Blag. 6*  
September 15, 1954

TRIP TO: R. C. A. TUBE PLANT  
Lancaster, Pa.

DATE OF TRIP: September 3, 1954

PERSONS CONTACTED: John Vavrick, Equipment and Parts Sales, Harrison  
William Straicher, Factory Engineer  
Earl Wood, Plant Manager

Visit arranged by C. W. Taylor, Manager Equipment and Parts Sales, Harrison

REPORT BY: L. E. Swedlund and H. Leeder

The object of the trip was to inspect the facilities used for the production of oscilloscope tubes, to study sauerisen cementing of oscilloscope guns, and to discuss the availability of electron gun parts and special equipment. We were escorted through the factory by John Vavrick and inspected their facilities for gun assembly, screening, processing and test. Their facilities, in general, were similar to ours but provided more room. Some of the processes of particular interest were as follows:

Cathodes are coated and assembled in a special clean, white room even though the general production area is air conditioned and relatively much cleaner than our mount production area. Cathodes are sprayed by hand in a booth otherwise similar to our factory booth. The cathodes are crimped to the ceramic in a neat three-position press which does a rapid and precise job of assembly. A semi-automatic machine is used to weld a double cathode tab to the sleeve. Cathode-ceramic assemblies are fastened in grid cups by a special press which makes four indentations just below the ceramic. One operator running this machine can produce cathode assemblies at the rate of 900 per hour. This method eliminates the weld-in retainer ring. This method appears to offer a cost saving and more tightly held ceramic than our present method, and should be of primary interest in picture tube gun manufacture. A quotation was requested on this machine.

The oscilloscope guns are assembled on special fixtures, which they call hand lathes, and are cemented with an air operated cementing gun. Assembly, by an experienced operator, is very rapid. RCA mentioned that one operator can turn out 180 guns per shift. About twelve cementing fixtures are required per operator to allow continuous assembly while in-process mounts are drying. The cement is dried with hot air on a small turntable, the assembly fixture is removed, and the mounts are baked for four hours in an electric oven at 300° cc.

Mr. Vavrick will supply us with the cost of parts on the 7VPL, and also the cost of some of the special equipment described above.

Some other points of interest are that RCA is interested in providing mount business for Lancaster so recently reduced the price of their magnetic mount to \$1.00 (gun with cathode 55¢). This is appreciably below other suppliers. In the opinion of the writer, precision of alignment is not good enough for the best focus quality but reliability and life of the cathode is

very good, so this gun may be attractive for our rebuilt and replacement types. Electrostatic focus guns are now about \$1.90, but they expect to reduce them to \$1.75. These are glass beaded and of relatively better alignment than the magnetic mount, but as far as can be determined, are not yet good enough to meet Motorola specifications. They were also promoting their inside graphite paint at about \$1 per quart, which they claim has lower gas than other inside paints.

RCA personnel were helpful and cooperative in providing the manufacturing information request, but they did make a point of avoiding areas where color tube work was being done. It was evident that oscillograph design and mount production, among other things, is lagging because of the intensive effort on color tubes. If we can purchase parts and assembly fixtures at a favorable cost, this situation should provide an opportunity to move into a good competitive position on electrostatic deflection tubes.

L. E. Swedlund  
H. Leeder  
Special Products Design Engineering  
CATHODE RAY TUBE SUB DEPT.

HL:am

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